1:Redfield E-5 (1926-1927)1930
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metics are used except that at the carnival talcum powder may be put on the face.

Two generations ago the prevailing woman's costume in Tepoztlán was of another sort, a sort which included more aboriginal elements. This costume still survives in Tepoztlán, where two or three old women still wear it; there are probably others in the neighboring hamlets. It consisted of two principal garments: a skirt (N. *pitzcueitl*), of homespun, white above the hip and black below, where it was pleated; and a white triangle of similar homespun worn over the head like a *poncho* with one corner hanging down the back. This latter garment is the *quechquemitl*. It is a probably indigenous garment worn by Indian women in Central and Northern Mexico.

These two garments were made locally on primitive looms. Today all textiles are imported either as ready-made garments or as cloth to make up into clothing, except some of the women's belts which are still made locally.

The children's clothing reproduces that of the adults.

The aboriginal transportation system and that introduced by the Spaniards exist side by side in Tepoztlán, as they do nearly everywhere in Mexico. *Burros*, mules, horses, and oxen, with the accompanying paraphernalia—saddles, bridles, lassos, yokes—are used in patterns substantially those of sixteenth-century Spain. Only the wheel is not used in Tepoztlán, because the steepness and rockiness of the roads make its use impossible.

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Fig. 23. Tepoztecans, returning home from work.

is practiced by necessity, for the fields cease to produce after the first few years; in plow culture, the same fields may be planted year after year until the soil is completely exhausted.

Tlacolol is essentially geared to production for subsistence, while plow culture is better geared to production for the market. It is significant that most families who work *tlacolol* are landless and that *tlacolol* has traditionally been viewed as the last resort of the poor. However, farmers who own small plots of land may also work some *tlacolol* to supplement their meager income. Indeed, in the past few years a new trend is occurring in the village because of inflation. Tepoztecans who own considerable private land now rent it out or let it rest, and themselves work in *tlacolol*. This is resented by most *tlacololeros*, who believe that the communal lands should serve the landless. The attitude of the *tlacololeros* is better understood in the light of the fact that the communal lands are becoming exhausted and can no longer support the present-day population.

Other differences between *tlacolol* and plow culture include the cycles of work, the tools, the type of corn, the work techniques, and even the terminology. Gen-

2;Lewis E-5 (1943-1948)1951 NU37 Tepoztlan NU37

241 erally speaking, the tools and techniques used in *tlacolol* are still known by their Náhuatl names, whereas in plow culture Spanish names prevail. Still another difference results from the location of the lands involved. (See Fig. 22.) With few exceptions the privately owned land used for plow culture is much closer to the village than the *tlacolol* land. *Tlacololeros* generally rise at 4:00 A.M., travel about two to three hours to reach their fields, and return home a few hours later than plow culture farmers. The building of the road directly through the privately owned lands has made this contrast sharper. It is not uncommon for some Tepoztecan farmers to take the bus to their milpa. *Tlacololeros,* however, always walk or go by burro. (See Fig. 23.)

[512] [494] [484]

241 *PLOW CULTURE*

407 177 [412] The basic tools of production in plow culture are the ax, plow, machete, and iron hoe. Two types of plows are used: the *arado criollo* (wooden plow) and the *arado polco* (steel plow). The wooden plow (Fig. 24) was introduced by the Spaniards shortly after the Conquest; the first steel plow (Fig. 25) came into the village toward the latter part of the nineteenth century after the railroad had been built through the upper portion of the municipio. Before the Revolution of 1910-20 the steel plow was used only by a few families, and, as late as 1926-27, Redfield reported only a few steel plows.[4] However, by the early thirties plows became more widely used, and in 1943 most farmers used steel plows in addition to wooden plows, each being used for different operations. In 1943, approximately 213 families owned their plows. This number represented only 48 per cent of the families in the village who owned land. In other words, 52 per cent of the landowners lacked one of the basic tools for plow culture.

[422]

407 435 [322] The wooden plows are made locally by several men who specialize in this work, and the cost of the wooden plow is comparatively inexpensive. However, the prices of both the steel and wooden plow have increased in recent years, so that now considerable capital is needed to purchase a steel plow. (See Table 27.)

TABLE 27. Cost of Plows, in Pesos.

Year	Wooden Plow	Steel Plow
1926	3.00	—
1935	5.50	14.00
1940	7.50	18.00
1942	—	30.00
1944	12.00	40.00

492 [177] The precise date of the introduction of oxen to Tepoztlán is not known, but they have been used in the village since long before the Revolution. (See Fig. 26.) Most

[4] "The ground is prepared with a wooden plow. For new-broken or very strong earth there are a few steel plowshares." Redfield, *Tepoztlán,* p. 122.

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of the oxen were killed during the Revolution; and in the early twenties, mules and donkeys were used and are still used by some of the poorer families. Tepoztecans buy most of their oxen in the nearby state of Guerrero and in the southern part of the state of Morelos. By 1944 there were 179 oxen teams in the village. (See Table 28.)

It can be seen from this table that only 57 per cent of the landowners owned oxen. In general, those barrios which have a higher percentage of larger land-holdings show a higher number of families owning plows and oxen. In Tepoztlán it is considered uneconomical for a farmer with only a few hectares to own oxen. Furthermore, the high cost of oxen makes it impossible for most Tepoztecans to own any, and teams may be rented by the day or the season. (See Table 29.)

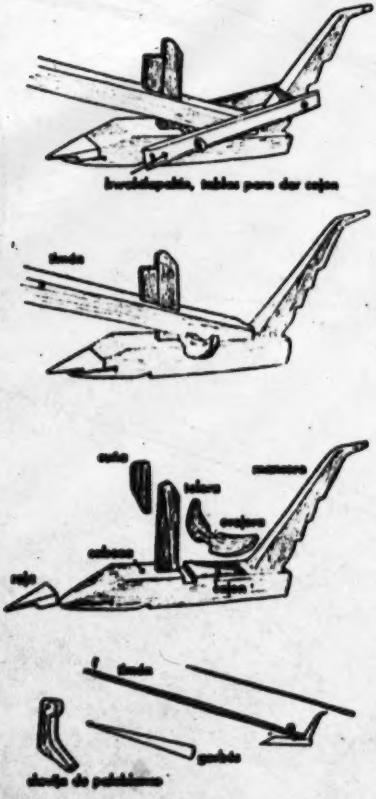

Fig. 24. The wooden plow.

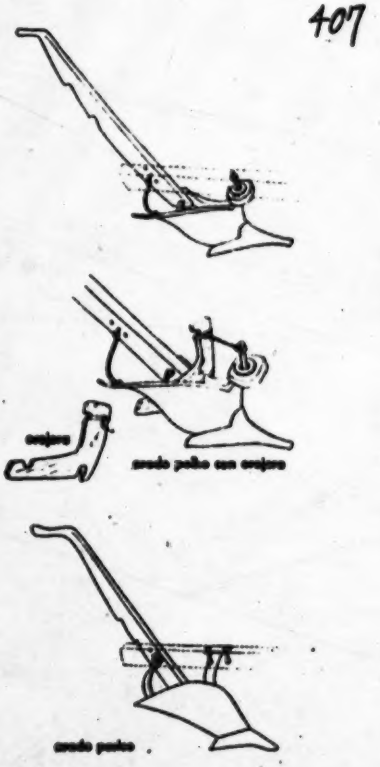

Fig. 25. The steel plow.

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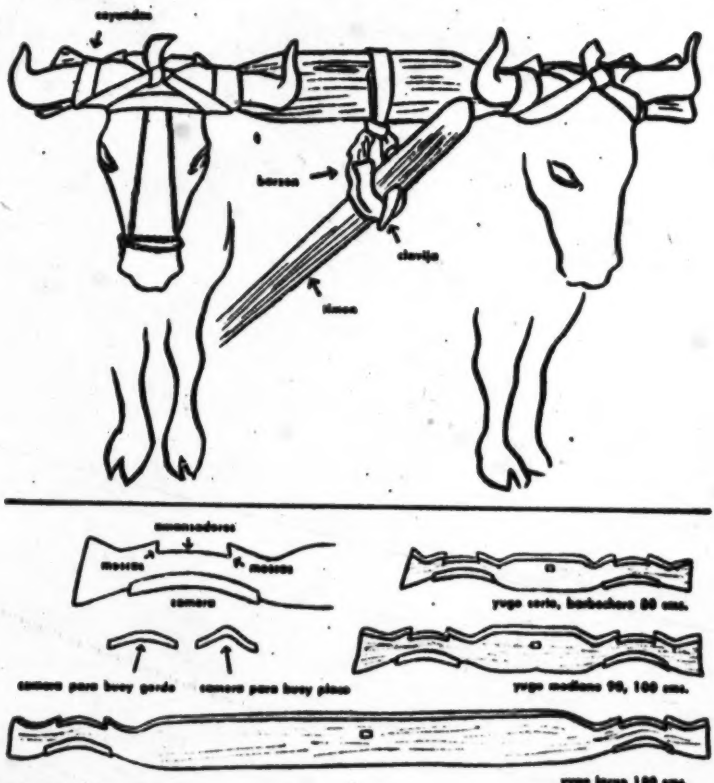

Fig. 26. Oxen and yoke.

[435] [439] The cost of oxen quoted in Table 29 refers to that paid in Guerrero. The cost in Tepoztlán was then considerably higher; today there is relatively little local buying and selling of oxen. For a long time, trips to Guerrero were considered dangerous, and the few who made such trips did so at considerable risk—and profit.

427 492 When oxen are rented for three months, the renter must assume full responsibility and agree to give the animals good care. In case they are injured, the renter must pay full damages. A man who rents oxen enjoys the privilege of using them for custom work. From June to August, it is estimated that a team of oxen will work seventy-eight days. The small variation in rental price, when paid in corn, must be considered in the light of changes in corn prices from 1926 to 1944, an [435] increase from twelve centavos per *cuartillo*[8] to sixty centavos.

[804]

[8] A *cuartillo* is equal to two liters in Tepoztlán.

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TABLE 28. Distribution of Ownership of Plows, Oxen, and Land, 1944.

Barrio	Families Owning Plows	Families Owning Oxen	Families Owning Land
San Miguel	48	44	83
Santo Domingo	70	50	61
La Santísima	36	32	62
Santa Cruz (large)	14	14	44
Los Reyes	23	21	30
San Sebastián	8	6	11
Santa Cruz (small)	8	6	10
San Pedro	6	6	10
Tepoztlán	213	179	311

TABLE 29. Cost of Oxen, Rental of Oxen, and Wages.

Year	Cost of Oxen[a]	Rental of Oxen per Day (With Driver)	Rental of Oxen per Three Months		Wages of *Peón* per Day
			In Corn[b]	In Pesos	
1926–30	60.00	1.50	6	40.00	50
1936	70.00	2.50	8	75.00	1.00
1940	100.00	3.25	8	125.00	1.25
1942	125.00	4.00	7	150.00	1.50
1943	200.00	5.00	7	150.00	1.50–2.00
1944 (April)	400.00	6.00	7	170.00	2.50–3.00
1944 (July)	400.00	7.50–10.00	7	200.00	3.00–3.50

[a] Cost in Guerrero.
[b] By 100 *cuartillos*.

WORK CYCLE AND PRODUCTION TECHNIQUES

The work cycle of plow culture in Tepoztlán is in four stages: preparation of the land, planting, cultivation, and harvest.

Preparation of Land: In discussing the preparation of the land, we must distinguish between breaking new land, or land that has been idle for a number of years, and preparing land that was under cultivation the year before. In the former case the process is referred to as the *barbecho* (breaking of new land); in the latter as *los tres arados* (the three plowings). The system of plowing used in each case differs considerably. Some Tepoztecans begin their first *barbecho* in the dry or slack season, generally in March. However, at this time the earth is parched and hard, and plowing is difficult and slow. For this reason, farmers prefer to break new land during the rainy season, generally in August, in preparation for the following year. If the weeds are tall and strong they are cut with a machete, piled up to dry, and are burned.[6] It takes a man about three days to clear a heavily

[6] The most stubborn weeds are known as *sacate chino*. These have deep roots, and if the field is heavily weeded it is necessary to plow in January and again in March. The older men say that this weed came in after the Revolution.

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243 weeded field of one hectare. Whenever possible the weeds are plowed under to improve the fertility of the soil. The steel plow is used in the *barbecho*, and the land is plowed in one continuous furrow to make a concentric rectangular form.

If the field is large, it may be divided into two or three parts, each of which is plowed in the same fashion. The land is always plowed at right angles to the direction in which the rows of corn are to be planted, so that the rows can be kept straight. Tepoztecans pride themselves on having straight rows of corn, and farmers [461] will compete with one another to see who can plow the straightest. One man with a single team of oxen can plow on an average of about two *cuartillos* a day. If time permits, two *barbechos* will be given; the second is always done soon after the first rains, toward the end of May or early in June.

In the case of *los tres arados* which is used in preparing a field that has been in cultivation the previous year,[7] the steel plow is also used, and the plowing follows the old corn beds and furrows. The plow is placed just to the right of the old cornstalks, and the earth is turned to the right. This is called the *primer arado* (first plowing). When the oxen reach the end of the furrow they are turned, and the same process is followed on the adjoining corn bed, so that a new mound of earth is formed where the furrow was before. This is called the *segundo arado* (second plowing). In both the first and second plowing a short yoke is used, and the oxen walk in the furrows on either side of the corn bed. The plow driver walks [492] to the left of the bed, holds the plow with his right hand, and directs the oxen with his left. The *tercer arado* (third plowing) goes through the center of the corn bed. The third plowing forms part of the process of planting.

243 *Planting:* This generally begins a few days after the ground has been plowed, 221 preferably when the earth is humid. But it is important to note that in Tepoztlán there is a great deal of leeway in the time of planting. A few days or even a few weeks make very little difference in the net results. Corn can be planted any time between June 1 and July 25 with a fairly good chance of getting a crop. Tepoztecans, [461] therefore, follow no rigid work cycle. Of approximately four hundred farmers who may plant corn with plow and oxen in any one year, no more than a third begin their work immediately after the first rains. The reasons for this are varied. Many own neither land nor oxen and may be delayed in making arrangements for renting, in preparing their tools, plows, and yokes; others may still be busy selling wood and charcoal; still others may be delayed by illness or death in the family. It is a common sight in Tepoztlán to see corn at various stages of growth during the rainy season.

243 The selection of seed for planting is generally done soon after the harvest in January, when the finest ears of corn are set aside to be shelled later in May or 242 June, just before planting. Three types of corn are used in plow culture, *ancho*

[433] [461] [7] Some use the *barbecho* on land that has been cultivated the year before, and then follow with *los tres arados*. This gives a better yield but involves at least three additional days of work for a plot of twenty *cuartillos* or approximately two hectares. Only the best farmers, about ten per cent, do this.

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blanco, pepitillo blanco, and *semilla azul.*[8] *Ancho blanco* is the most widely used corn; *pepitillo* is used only in the heavier clay soils. *Semilla azul* is used for replanting cornfields which have not germinated, because it ripens faster and catches up with the earlier plantings.

A large number of Tepoztecans still follow the custom of having the seed blessed by the priest on the day of San Isidro, May fifteenth. Generally the women take the corn to the church. Each woman selects about ten of the finest ears of corn, as well as some of her best beans and squash. She may also take along some copal and a censer. As many as two hundred women may attend this blessing. As they burn the incense in the church, the priest comes out and blesses the seed with holy water. The ears of corn which have been blessed are to be placed in the milpas to rot and must not be burned, or the seed will not grow.

The ancient custom of addressing the seed in Náhuatl, before planting, is still remembered by most men over age fifty. Many informants recall that their grandfathers spoke to the corn in a short formal ritual, before planting. The ceremony in the fields was often accompanied by great emotion and even weeping. One of these speeches translated from the Náhuatl follows:

"My beloved body and strength, go and bear the cold and the storm of the seasons; all is for us."[9]

Today a similar ritual is still followed by a relatively small number of Tepoztecans, except that the recitations include references to God and are said in Spanish. The following are examples of present-day blessings:

God bless you. I bury you and if you return while I still live the satisfaction will be mine; if not then my descendants.

In the name of God I am going to plant this seed. I implore Thee to bless my work.

Bless your sainted name God Our Father who is the first one to care for us. From here you go out and from where you go out God wishes you to return. For I am going to throw you into the field and you will remain only with the blessing of God. And may God free you so that we all will have something.

In planting corn, two men and one team of oxen are the minimum requirement. More than one team is rarely employed on a single field. However, two or three men may be used if the owner has a large family or can afford to hire *peones*. In planting on land that has been newly broken, the plow is always pulled at right angles to the existing furrows. One man, the oxen driver, leads the oxen while another man follows and drops four seeds in the furrow for each plant at a space of about a pace apart. The seed is dropped in front of the left toe, and the dirt is pushed over the seeds with the right foot. In planting the first few seeds, some Tepoztecans still follow the old custom of making the sign of the cross with their hand as they drop the seeds. Older men believe that planting one day after the

[8] See Appendix A, p. 449.

[9] "Notlashocuyo yocatzin xomohuicatetzi querzquish cequisti tonalli huan yeecatl timoochicahuitiul tepampa."

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243 appearance of the new moon brings a better harvest. The rows of corn are 80 or 90 cm. apart, depending upon the fertility of the field. Yokes are therefore two standard sizes.

[821] [492] [244] Some farmers mix their corn seed with beans: *frijol chino, pepita,* and *frijol colorado.* When this is done, no special number of seed is used. After the first cultivation, *frijol negro* or *bayo* may be planted between the corn hills.

In planting a field that has been prepared by the *dos arados* rather than by the *barbecho,* the plow is directed right through the middle of the old corn beds, and this is known as the *tercer arado,* completing the three plowings involved in the preparation and planting. Both in the newly broken ground and in the land that [407] has been in cultivation the preceding year, the *arado criollo* (wooden plow) is used in planting, and a piece of wood is inserted which acts as a double mouldboard and throws the earth to both sides. The amount of corn that is planted per day depends upon the type of corn and the speed of the oxen and driver. On the average, two men working with a team of oxen can plant eight to ten *cuartillos* of *maíz ancho* per day, and about five to six *cuartillos* of *maíz pepitillo.*

First Cultivation: Two or three cultivations are generally given to cornfields; these cultivations are known as *el primer mano* or *el primer beneficio, el segundo mano,* and *el tercer mano.*

The first cultivation of the corn is generally done twenty days after the planting when the corn shoots are still very small.[10] Again the steel plow and the short yoke is used, and the oxen walk between the furrows on either side of the corn bed. The plow is pulled to the right of the row of young corn, so that the earth is turned away from the corn. The driver walks to the left of the row and holds the plow with his right hand. Two *peones* are used in addition to the driver. The *peones* follow the plow, staying on the left side of the row of corn; they bend over the corn and with their hands they carefully push the earth around the young plants. The two *peones* work simultaneously about twenty feet apart and by-pass each other when they reach a section that has already been cultivated. The first cultivation of a plot of ten to twelve *cuartillos,* using two *peones,* takes on an average of two days.

[825] [824] Tepoztecans have an ingenious way of fighting ants which threaten the young corn. When the young shoots are about to appear, they take the leaves of a tree called *yamatl* (of the *amate* family), chop up the leaves, and sprinkle them over the rows of corn, and especially on ant nests. The ants prefer this leaf to corn, and Tepoztecans claim it makes them thin and eventually kills them. The leaf contains a white, milky substance so strong that it will peel the skin off a man's hand. Another tree whose leaves are used for the same purpose is *yoyohtli.*

Second Cultivation: The second cultivation begins about twenty days after the first cultivation is completed, generally in the last week of July. The process is very

[10] In fields which have gathered much water, Tepoztecans may plow in the furrows about eight days after planting, to spread the water. Such plowing is called *sobernal.*

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Harvest: The harvest generally consists of two stages. The first is stripping the cornstalks of their leaves. This process is known as the *zacateo* and begins in early November. The leaves are bundled and transported to the house, where they are used for fodder. Stripping a cornfield of ten or twelve *cuartillos* takes six days of work. Sometimes men will compete to see who can strip two rows in the shortest time. The *zacate* is tied into bundles or *gavillas*. Twelve *gavillas* make up one *manojo* and twelve *manojos* make up one *carga*. These *cargas* of *zacate* are transported home on horse or mule. The transporting of the *zacate* produced on a field of ten to twelve *cuahtillos* takes three days of work, using two mules and making two trips a day.

The harvest of the corn itself begins in early December.[11] It takes about five days of work to pick the corn on a field of one hectare. A good worker can pick approximately two *cargas* of corn a day. The corn, like the *zacate*, is transported by mule and it takes about the same time, that is, three days. It is customary to celebrate the harvest by serving *pozole* to the helpers and to the men who are hired to transport the corn. During the harvest the wives may help in stripping the leaves off the ears of corn. These leaves are known as *totomaxkli* and are used in making tamales. Widows often ask for permission to gather corn leaves to sell.

The *cuatequitl* or unpaid cooperative labor system referred to earlier is reserved exclusively for the planting, cultivation, and harvesting of the land owned by the barrio for the support of its chapel, and working the barrio land is the only occasion for unpaid collective labor in agriculture. There are cases of labor exchange between relatives, but this is viewed as very different from *cuatequitl*. I should like to emphasize this point, for Tepoztecan farming is highly individualistic and in this sense quite similar to our own farming.

There is some time pressure in harvesting, in those cases in which many privately owned plots are encircled by a single fence or stone wall. The farmer who has completed his harvest is entitled to allow his animals to graze, and this endangers the corn on those fields not yet harvested. To avoid this danger and the many quarrels resulting from it, the farmers within a single enclosure generally come to some agreement to have their plots harvested within a specified time, which agreement is registered with the local authorities. Although this situation would seem to call for cooperative harvesting, each family, with the aid of hired labor, harvests its own field.

In the first few days of January most farmers begin to store the corn in the storage bins that are of two types, the *xincolotes* and the *ahuatlapiles*. The corn is generally stored without being shelled so that it will better resist the corn worms which are a great problem to Tepoztecans. Sometimes a considerable portion of the harvest is eaten or spoiled by these worms. It is customary in many families to leave the corn on the cob until April or May; prior to that, they shell only what they need.

[11] Formerly stripping and harvesting were begun after the appearance of the full moon.

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that cattle stealing increases markedly before important fiestas, particularly before the Carnaval in February, the fiesta of Ixcatepec in April, the celebration of the national holidays in August, and All Saints' Day on November first. Cattle thieves are shot on sight, and each year a few are killed.

It is estimated that the families who own considerable cattle spend approximately 140 days during the year in caring for them. A rough estimate of the distribution of the time, based on interviews with a few cattle owners, follows:

Month	*Days Spent Guarding Cattle*
January	8
February	8
March	8
April	12
May	12
June	4
July	4
August	15
September	30
October	31
November	4
December	4
Total	140

Although cattle and other livestock are an important supplementary source of income, animal ownership is on a small scale and is limited to a relatively small proportion of families. Table 39 presents the distribution of cattle, oxen, horses, mules, donkeys, and hogs among families in each of the barrios.

It can be seen that only 179, or 21 per cent, of the families own cattle. Well over 50 per cent of these families own between one and three cows; about 40 per cent own four to ten cows. The largest herd in 1943 was a little over seventy head, although estimates obtained in 1947 showed much larger herds, with the two wealthiest cattlemen having about 150 head each. There are only about a dozen men in the village who might be said to raise cattle on a large scale, and only six of these have herds of over fifty.

The ownership of oxen is limited to 177, or 20 per cent of the families. Of these, only two families own more than one team of oxen. The low percentage of families owning a team of oxen indicates the limited extent to which Tepoztecan farmers own one of the basic means of production.

The distribution of horses, donkeys, and mules owned by families in the proportions of 28 per cent, 11 per cent, and 14 per cent, respectively, reflects the local evaluation of work animals. Mules are more popular than donkeys, and horses are valued more highly than either. Riding horses as against work horses are considered

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a luxury. The prestige associated with horse ownership goes back to the colonial period when only leading men of the village were allowed to ride a horse.[2]

Ownership of horses, mules, or donkeys is on a small scale; most families have only one animal. The largest number of work animals owned by a single family is six horses and four mules.

Hogs are more widely distributed among the villagers. About forty per cent of the families of Tepoztlán own at least one hog, and many own two or three. The smaller outlay of capital and the lower gains involved in the purchase and sale of hogs limits hog-ownership to the poorer families. It is interesting to note that a very small proportion of the families in the barrio of San Miguel own hogs despite the fact that this barrio has a large proportion of poor families. This may be attributed to the fact that the road runs through this barrio, and the passing buses and automobiles have killed off too many of the hogs to make hog raising profitable or safe.

Most of the animals used for food are slaughtered in the village. There is practically no trade in cattle or hogs outside of the municipio. There is also relatively little buying and selling of cattle and oxen within the village, since most of them are traditionally purchased in the state of Guerrero where prices are lower. Some men make it a practice to go to Guerrero to buy cattle for resale in Tepoztlán at a nice profit, but this is done on a small scale and only intermittently. Several of the better-to-do farmers became prosperous by doing this during the turbulent years after the Revolution when few dared to leave the village.

It is estimated that a team of oxen work on an average of ninety days a year. Since most families do not own their own oxen, the oxen owners do a good deal of custom work. In 1947 an oxen owner charged 16 pesos per day, that is 4 pesos for the driver and 12 pesos for the team. The income from renting a team of oxen for a ninety-day period would therefore be 1,080 pesos, less about 120 pesos for the cost of feed. When oxen are rented by the season, the charge is generally only 200 pesos, but the renter has the obligation of feeding and caring for the animals and assumes all responsibility in case of accident or death. Plow-oxen are also rented in exchange for corn, generally for six *cargas* of corn, worth about 300 pesos in 1947.

Mules and donkeys are considered to yield an even greater income than plow oxen, for they can be rented for a greater variety of jobs and for longer periods. Mules are used primarily for transporting charcoal, wood, corn, and beans. The rental for two mules was 14 pesos a day in 1947. The income from a team of mules would therefore be close to 500 pesos over a ninety-day period.

Hogs are bought, fattened, and sold by many families, but the profit is kept low because of the local custom of fattening hogs with good corn, which is expensive. A young pig costs about 30 pesos and after a year of fattening can be sold to a butcher for 225 pesos. The cost of food per day runs to about 50 centavos, or 18½

[2] For documents on this point see *Indios*, Vol. 4, Exp. 398.